Reg. No. : ....

Name : ....

Sixth Semester B.Tech. Degree Examination, March 2015
(2008 Scheme)
08.603 : COMPUTER AIDED DESIGN (MPU)
(Special Supplementary)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **Each** questions carries **4** marks.

1. Discuss the beam penetration method for displaying color pictures.

2. Explain the working of TFT monitor.

3. Write the computational procedure for DDA algorithm.

4. What is meant by composite transformation ? Show that two successive translations are additive.

5. Write the transformation matrix for 3D rotation.

6. Obtain the scale factors for Window to View port co-ordinate transformation.

7. Explain the difference between CSG and B-rep method for solid modeling.

8. Write notes on different computer software packages for FEM.

9. Derive shape function for a one dimensional element.

10. Describe the general steps in a finite element analysis.

PART – B

Answer **one** question from **each** Module. **Each** question carries **20** marks.

Module – I

11. a) Discuss the various hardware used in graphic design process.

    b) Explain the suitable example the application of virtual reality in product design.

    OR

12. a) Explain with a neat sketch the working of a plasma display device.

    b) Discuss the commonly used data exchange format and their applications in CAD.

Module – II

13. a) Explain the Z-buffer algorithm for hidden surface removal.

    b) Illustrate the Bressenham's straight line algorithm to digitize a line with end points (30, 10) and (40, 28).

    OR

14. a) Write the transformation matrices for a step movement (uniform height and depth) of a vertical line in the first Quadrant starting from the origin with its lower point is at origin.

    b) Discuss the major features of solid modeling packages.

Module – III

15. a) Derive the expression for the stiffness matrix of a line element.   8

    b) What are the different types of elements ? Which can be used for finite element analysis ?   7

    c) What do you mean by post processing stage of a finite element software ?

    5

    OR

16. Write notes on :

    i) Stiffness matrix for a beam element

    ii) FEM steps in formulation of two dimensional problem

    iii) Application of Axisymmetry in the formulation of FE problems

    iv) Direct stiffness approach for the formulation of FE problems

    v) Weighted residual and Galerkin approach for solving engineering problems.